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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/678,408

10/02/2003

Thomas J. Karol

101221-651

9995

27387 7590 10/23/2008  
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EXAMINER

MCAVOY, ELLEN M

ART UNIT

PAPER NUMBER

1797

MAIL DATE

DELIVERY MODE

10/23/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/678,408	<b>Applicant(s)</b> KAROL ET AL.	
	<b>Examiner</b> Ellen M. McAvoy	<b>Art Unit</b> 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 09 July 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,6-15,18 and 19 is/are pending in the application.
- 4a) Of the above claim(s) 19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,6-15 and 18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

***Election/Restrictions***

Newly submitted claim 19 is directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: the organo borate composition is now formed by partially borating with boric acid a mixture of diethanolamide and monoglyceride. The additional reactant monoglyceride would require a new search and further consideration.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claim 19 is withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 7, 10, 14, 15 and 18 rejected under 35 U.S.C. 103(a) as being unpatentable over Canadian Patent Application (2,014,775).

Applicants' arguments filed 09 July 2008 have been fully considered but they are not persuasive. As previously set forth, the Canadian patent application discloses ester compounds useful as rust-preventing and corrosion-combating additives and as friction modifiers for lubricating oil compositions. The ester compounds are prepared by reacting a C<sub>12</sub> to C<sub>22</sub> saturated or unsaturated fatty acids with monoethanolamine or diethanolamine, and further

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reaction with boric acid. See pages 1-2. The product obtained contains boron in an amount of 1.1 % by weight which is within the claimed boron content amount of between 0.8 and 1.2 % by weight. The prior art teaches that the concentration of the borate esters in lubricating oil compositions is usually from 0.1 to 1.0% by weight which meets the limitations of the claims of less than about 1% for the organo borate ester component. The prior art allows for the addition of other additives to the compositions such as a sulfurized olefin, a phosphorus-nitrogen complex, a sulfur-phosphorus compound, a friction modifier and a metal deactivator compound. See page 4. Suitable metal deactivator compounds include derivatives of dimercaptiothiadiazoles which may be added to the composition in an amount from 0.01 to 0.2 % by weight. See page 7. Thus the examiner is of the position that the Canadian patent application clearly meets the limitations of the above rejected claims when the antiwear additive component (b) contains a 1,3,4-thiadiazole compound.

In response applicants argue that the organo borate ester of the presently claimed invention differs from that of CA '775 since the invention is a mixture of both monoglyceride and diethanolamine fatty acid amide, whereas CA '775 teaches only a specific embodiment covering the diethanolamine fatty acid amide. This is not deemed to be persuasive because independent claims 1 and 18 include that the organo borate ester composition is formed by reacting about 1 mole fatty oil and about 1.8 moles diethanolamine followed by subsequent reaction with boric acid which is clearly taught by the Canadian patent application as set forth above.

***Claim Rejections - 35 USC § 103***

Claims 1, 7, 10, 14, 15 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Canadian Patent Application (2,014,775) in combination with Karol (5,055,584) or Karol (4,761,482).

Applicants' arguments filed 09 July 2008 have been fully considered but they are not persuasive. As previously set forth, the Canadian patent application is relied on as outlined above. The antiwear composition of the claims additionally contain component (2), one or more components selected from (i) a thiadiazole compound of formula (I); (ii) a bisdithiocarbamate compound of formula (II); (iii) dithiocarbamates of formula (III) or (IV); (iv) phosphorodithioates of formula (V); (v) phosphorodithioate esters of formula (VI); and (vi) a non-sulfur molybdenum additive. However, all of the component (2) additives are known in the lubricating oil art as set forth by applicants in the specification. Specifically, the 1,3,4-thiadiazole compounds, component 2(i), are taught by the Karol references. Karol '584 discloses reaction products of a maleic compound and 2,5-dimercapto-1,3,4-thiadiazole as antiwear agents and oxidation inhibitors in lubricating oil compositions. See column 1, line 52 to column 2, line 36. Karol '482 discloses reaction products of a terpene compound and 2,5-dimercapto-1,3,4-thiadiazole as antiwear agents and oxidation inhibitors in lubricating oil compositions. The compositions of either Karol reference may contain 0.01 to 10 percent of the thiadiazole additive and may also contain 0 to about 1.0 % by weight of zinc dihydrocarbyl- phosphorodithioate which meets the limitations of component 2(iv) of applicants' claims. The Karol references allow for the addition of conventional lubricant additives. Thus it would have been obvious to the skilled artisan at the time the invention was made to have combined the references and to have arrived at the claimed

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lubricant additive compositions. The examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation relied on by the examiner is the disclosure in the Karol references allowing for the addition of conventional lubricant additives to the compositions.

In response applicants argue that the organo borate ester of the presently claimed invention differs from that of CA '775 since the invention is a mixture of both monoglyceride and diethanolamine fatty acid amide, whereas CA '775 teaches only a specific embodiment covering the diethanolamine fatty acid amide. This is not deemed to be persuasive because independent claims 1 and 18 include that the organo borate ester composition is formed by reacting about 1 mole fatty oil and about 1.8 moles diethanolamine followed by subsequent reaction with boric acid which is clearly taught by the Canadian patent application as set forth above.

### ***Claim Rejections - 35 USC § 103***

Claims 1, 6-9 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Canadian Patent Application (2,014,775) in combination with Nakazato et al (5,629,272).

Applicants' arguments filed 09 July 2008 have been fully considered but they are not persuasive. As previously set forth, the Canadian patent application is relied on as outlined above. Component 2(ii), the bisdithiocarbamate, and component 2(iii), the dithiocarbamate, are

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well-known additives to lubricating oil compositions as evidenced by Nakazato et al [“Nakazato”] which discloses low-phosphorous lubricating oil compositions for internal combustion engines containing from 0.05 to 2 wt.% of an antiwear agent which is an aliphatic amide compound and either a dithiocarbamate compound or an ester derived from a fatty acid and boric acid. The dithiocarbamate compounds are set forth in column 4, lines 28-50, and meet the limitations of components 2(ii) and 2(iii) of the claims. See also column 7, lines 1-38. Nakazato allows for the addition of conventional additives to the engine oil composition as set forth in column 8, lines 5-16. Thus it would have been obvious to the skilled artisan at the time the invention was made to have combined the references and to have arrived at the claimed lubricant additive compositions. The examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation relied on by the examiner is the disclosure in Nakazato allowing for the addition of conventional lubricant additives to the compositions.

In response applicants argue that the organo borate ester of the presently claimed invention differs from that of CA ‘775 since the invention is a mixture of both monoglyceride and diethanolamine fatty acid amide, whereas CA ‘775 teaches only a specific embodiment covering the diethanolamine fatty acid amide. This is not deemed to be persuasive because independent claims 1 and 18 include that the organo borate ester composition is formed by

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reacting about 1 mole fatty oil and about 1.8 moles diethanolamine followed by subsequent reaction with boric acid which is clearly taught by the Canadian patent application as set forth above.

***Claim Rejections - 35 USC § 103***

Claims 1, 11 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Canadian Patent Application (2,014,775) in combination with either Holt et al (6,187,723) or Atherton (5,925,600).

Applicants' arguments filed 09 July 2008 have been fully considered but they are not persuasive. As previously set forth, the Canadian patent application is relied on as outlined above. Holt et al ["Holt"] and Atherton are added to teach that component 2(v) of the claims, the phosphorodithioate esters of formula (VI), are well-known lubricating oil additives. See column 4, line 48 to column 5, line 8 of Holt, and column 3, lines 20-47 of Atherton. Thus it would have been obvious to the skilled artisan at the time the invention was made to have combined the references and to have arrived at the claimed lubricant additive compositions. The examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation relied on by the examiner is the disclosure in the Canadian patent application allowing for the addition of conventional lubricant additives to the compositions.

In response applicants argue that the organo borate ester of the presently claimed invention differs from that of CA '775 since the invention is a mixture of both monoglyceride and diethanolamine fatty acid amide, whereas CA '775 teaches only a specific embodiment covering the diethanolamine fatty acid amide. This is not deemed to be persuasive because independent claims 1 and 18 include that the organo borate ester composition is formed by reacting about 1 mole fatty oil and about 1.8 moles diethanolamine followed by subsequent reaction with boric acid which is clearly taught by the Canadian patent application as set forth above.

***Claim Rejections - 35 USC § 103***

Claims 1, 12, 13 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Canadian Patent Application (2,014,775) in combination with Rowan et al (4,889,647).

Applicants' arguments filed 09 July 2008 have been fully considered but they are not persuasive. As previously set forth, the Canadian patent application is relied on as outlined above. Rowan et al ["Rowan"] disclose molybdenum complexes prepared by reacting (a) a fatty oil, (b) diethanolamine and (c) a molybdenum source, which impart antifriction and antiwear properties to lubricating oil compositions. See column 1, line 54 to column 2, line 8. This meets the limitations of component 2(vi) of the claims, the non-sulfur molybdenum additive. Thus it would have been obvious to the skilled artisan at the time the invention was made to have combined the references and to have arrived at the claimed lubricant additive compositions. The examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge

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generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation relied on by the examiner is the disclosure in the Canadian patent application allowing for the addition of conventional lubricant additives to the compositions.

In response applicants argue that the organo borate ester of the presently claimed invention differs from that of CA '775 since the invention is a mixture of both monoglyceride and diethanolamine fatty acid amide, whereas CA '775 teaches only a specific embodiment covering the diethanolamine fatty acid amide. This is not deemed to be persuasive because independent claims 1 and 18 include that the organo borate ester composition is formed by reacting about 1 mole fatty oil and about 1.8 moles diethanolamine followed by subsequent reaction with boric acid which is clearly taught by the Canadian patent application as set forth above.

**THIS ACTION IS MADE FINAL.** Applicants are reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ellen M. McAvoy whose telephone number is (571) 272-1451. The examiner can normally be reached on M-F (7:30-5:00) with alt. Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ellen M McAvoy/

Ellen M McAvoy  
Primary Examiner  
Art Unit 1797

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October 17, 2008

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